

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A transmission diversity device, comprising:

a plurality of antenna elements;

a plurality of processing devices respectively connected to one of the antenna elements; and

phase comparison and adjustment means for comparing phases of data signals received at the antenna elements and for adjusting phases of signals transmitted by the antenna elements according to the result of the comparison,

wherein the transmission diversity device is designed for a multicarrier transmission and individually compares the phase of each ~~frequency~~ data subcarrier of the multicarrier transmission of each antenna element with a phase of a corresponding ~~frequency~~ data subcarrier of at least one other antenna element and adjusts it subsequently for a transmission.

Claim 2 (Previously Presented): The transmission diversity device according to Claim 1, wherein the device is designed for an OFDM transmission.

Claim 3 (Previously Presented): The transmission diversity device according to Claim 1, further comprising:

a subcarrier phase comparison dependent amplitude adjustment function.

Claim 4 (Previously Presented): The transmission diversity device according to Claim 1, further comprising

a means for averaging phase differences of a plurality of subcarriers respectively received at one antenna element.

Claim 5 (Previously Presented); The transmission diversity device according to Claim 1, further comprising

a means for frequency adjusting phase differences of the subcarriers received respectively at one antenna element.

Claim 6 (Previously Presented): The transmission diversity device according to Claim 1, further comprising

a means for comparing only predetermined subcarriers of different antenna elements.

Claim 7 (Currently Amended): A method for a wireless transmission diversity transmission by means of a plurality of antenna elements and a plurality of processing devices respectively connected to one of the antenna elements, comprising:

comparing, individually, a phase of each ~~frequency~~ data subcarrier of a multicarrier transmission for each antenna element with a phase of a corresponding ~~frequency~~ data subcarrier of at least one other antenna element; and

adjusting it subsequently for a transmission.

Claim 8 (Previously Presented); The method according to Claim 7, wherein the step of comparing is repeated at least twice to calculate an average value used for the step of adjusting.

Claim 9 (Previously Presented): The method according to Claim 7, wherein the multicarrier transmission is a OFDM transmission.

Claim 10 (Previously Presented): The method according to Claim 7, further comprising

the step of amplitude adjustment depending on the subcarrier phase comparison.

Claim 11 (Previously Presented): The method according to Claim 7, further comprising:

the step of averaging the phase differences of a plurality of subcarriers respectively received at one antenna element.

Claim 12 (Currently Amended): The method according to Claim 7, further comprising

the step of frequency adjusting phase differences of the data subcarriers received respectively at one antenna element.

Claim 13 (Previously Presented): The method according to Claim 7, further comprising:

the step of comparing only predetermined subcarriers of different antenna elements.

Claim 14 (Previously Presented): The method according to Claim 7, wherein the step of comparing comprises

the step of correlating time domain data.

Claim 15 (Previously Presented): The method according to Claim 7, wherein in case it is detected that at any of the antenna elements no signal or a signal with an amplitude

below a predetermined threshold is received, said antenna element is not used for a transmission.

Claim 16 (Previously Presented): The method according to Claim 7, wherein the method is only applied in a base station of a wireless transmission system.

Claim 17 (Currently Amended); A computer readable medium and instructions in the medium to be executable by a computer, said instructions comprising:

comparing individually a phase of each ~~frequency~~ data subcarrier of a multicarrier transmission for each antenna element with a phase of a corresponding ~~frequency~~ data subcarrier of at least one other antenna element; and
adjusting it subsequently for a transmission.

Claim 18 (Currently Amended): A communication device for transmitting and/or receiving OFDM signals in a multicarrier transmission system, the communication device comprising:

a plurality of antenna elements for receiving the OFDM signals which are transmitted by using a plurality of data subcarriers ~~being~~ used for the transmission of said OFDM signals in the multicarrier transmission system; and

a processing device for calculating subcarrier phases of each of said plurality of data subcarriers used for the multicarrier transmission of said OFDM signals and for adjusting each of said data subcarrier phases of said plurality of subcarriers in accordance with said calculated subcarrier phases respectively and adjusts said subcarrier phases so as to reduce a multipath fading in the multicarrier transmission system.

Claim 19 (Currently Amended): A communication device for transmitting and/or receiving OFDM signals to/from another communication device in a multicarrier transmission system, the communication device comprising:

a plurality of antenna elements for receiving the OFDM signals which are transmitted by using a plurality of data subcarriers being used for the transmission of said OFDM signals in the multicarrier transmission system; and

a processing device, connected to said plurality of antenna elements for calculating subcarrier phases of each of said plurality of data subcarriers used for the multicarrier transmission of said OFDM signals, so that subcarrier phases of each of said plurality of data subcarriers to be used in a subsequent communication process between said communication device and another communication device are adjusted in accordance with said calculated subcarrier phases.

Claim 20-22 (Canceled).

Claim 23 (Previously Presented): A communication device for transmitting OFDM signals in a multicarrier transmission system, the communication device comprising:

a plurality of antenna elements for transmitting the OFDM signals which are to be transmitted by using a plurality of subcarriers of the multicarrier transmission system, wherein said plurality of subcarriers are data subcarriers to transmit data information in the multicarrier transmission system;

processing device, connected to said plurality of antenna elements, for processing said OFDM signals to be transmitted,

wherein said processing device receives information concerning subcarrier phases of each of said plurality of data subcarriers, and adjusts subcarrier phases of said data

subcarriers to transmit said data information in accordance with said information concerning subcarrier phases.

Claim 24 (Previously Presented): A communication device for transmitting OFDM signals to receiver device in a multicarrier transmission system, the communication device comprising:

a plurality of antenna elements for transmitting the data information as said OFDM signals to be transmitted by using a plurality of data subcarriers of the multicarrier transmission system; and

processing device, connected to said plurality of antenna elements, for generating said OFDM signals to be transmitted by said plurality of antenna elements,

wherein said processing device obtains subcarrier phases of each of said plurality of data subcarriers based on the communication made between said communication device and receiver device in the multicarrier transmission system, and adjusts subcarrier phases of said data subcarriers to generate said OFDM signal in accordance with said subcarrier phases.

Claim 25 (Previously Presented): A communication device for transmitting and/or receiving OFDM signals in a multicarrier transmission system, the communication device comprising:

a plurality of antenna elements for receiving the OFDM signals each of which is transmitted by using a plurality of subcarriers in the multicarrier transmission system; wherein said plurality of subcarriers are data subcarriers for transmitting data signals; and

processing device for calculating subcarrier phases of all of said data subcarriers of said OFDM signals and adjusts said subcarrier phases in accordance with said calculated subcarrier phases.

Claim 26 (Currently Amended): A communication device for transmitting and/or receiving OFDM signals in a multicarrier transmission system, the device comprising:

a plurality of antenna elements for receiving the OFDM signals each of which is transmitted by using a plurality of subcarriers of the multicarrier transmission system, wherein said plurality of subcarriers are data subcarriers for transmitting data signals; and

processing device, connected to said plurality of antenna elements, for processing said received OFDM signals,

wherein said processing device calculates symbol vectors indicating subcarrier phases of said plurality of subcarriers of each of said received OFDM signals so that subcarrier phases of each of said plurality of subcarriers to be used in a subsequent communication process in the multicarrier transmission system are adjusted in accordance with said calculated symbol vectors.

Claim 27 (Previously Presented): A communication device for communicating data signals with another communication device in an OFDM multicarrier transmission system, the device comprising:

a plurality of antenna elements for receiving said data signals which are transmitted by using a plurality of subcarriers being used in said OFDM multicarrier transmission system, and

processing device, connected to said plurality of antenna elements, for calculating subcarrier phases of said plurality of subcarriers,

wherein said processing device, when said communication device send data signals to said another communication device by using said plurality of subcarriers, adjusts said

subcarrier phases of said plurality of subcarriers in accordance with said calculated subcarrier phases.

Claim 28 (Previously Presented): A communication device for enabling data communication with another communication device in an OFDM multicarrier transmission system, the device comprising:

a plurality of antenna elements for receiving data signals which are transmitted by using a plurality of subcarriers being used in said OFDM multicarrier transmission system, calculator for calculating subcarrier phases of said plurality of subcarriers, and transmitter, being designed to receive said calculated subcarrier phases, for performing a transmission process to transmit data signals from said communication device to said another communication device, wherein said transmitter adjusts subcarrier phases of said plurality of subcarriers used in said transmission process on the bases of said calculated subcarrier phases.

Claim 29 (Currently Amended): A communication device for transmitting and/or receiving OFDM signals in a multicarrier transmission system, the communication device comprising:

a plurality of antenna elements for receiving the OFDM signals transmitted by using a plurality of subcarriers being used for the transmission of said OFDM signals in the multicarrier transmission system, wherein said plurality of subcarriers are data subcarriers for transmitting data signals; and

processing device, connected to said plurality of antenna elements, for calculating subcarrier phases of said plurality of subcarriers used for the multicarrier transmission of said OFDM signals and for adjusting said subcarrier phases of said plurality of subcarriers to be

used for subsequent multicarrier transmission in the multicarrier transmission system in accordance with said calculated subcarrier phases.

Claim 30 (Currently Amended): A communication device for transmitting and/or receiving OFDM signals to/from another communication device in a multicarrier transmission system, the communication device comprising:

a plurality of antenna elements for receiving the OFDM signals which are transmitted by using a plurality of subcarriers being used for the transmission of said OFDM signals in the multicarrier transmission system, wherein said plurality of subcarriers are data subcarriers for transmitting data signals; and

processing device, connected to said plurality of antenna elements, for calculating subcarrier phases of said plurality of subcarriers used in the multicarrier transmission of said OFDM signals, and for adjusting subcarrier phases of said plurality of subcarriers, to be used in a subsequent communication for sending data information from said communication device to another communication device, in accordance with said calculated subcarrier phases.